Rhinehart Tire Fire Dump

Winchester, Frederick County, Virginia
Superfund Program Site Fact Sheet

Type of Facility: Tire Disposal Facility

Contaminants: Arsenic, Cadmium, Lead, Zinc, Nickel, Manganese, Polycyclic Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs)

Funding: Fund financed

Site Description and History

The Rhinehart Tire Fire Dump is located in an agricultural area on the outskirts of Winchester, Virginia. The privately owned site was used from 1972 to 1983 as a tire disposal facility. On October 31, 1983, a fire broke out in the 4.5-acre area and approximately 5 to 7 million tires were eventually engulfed in the fire. The fire produced a hot oil stream from the incomplete combustion of the rubber. The smoke plume spread a 50-mile trail across four states and hot oil flowed from Massey Run to Hogue Creek to the Potomac River. An Environmental Protection Agency (EPA) emergency team controlled the fire within a few days, but the tires continued to smolder for six months.

A pond, known as Dutchman's Pond, was constructed to collect the hot oil. Approximately 800,000 gallons of oil product were collected from the pond, removed from the site, and recycled into fuel oils. The migrating oil and fire fighting residues contaminated the site and local waters. Under a consent order with EPA, the owner constructed dikes and ditches for drainage control, and performed collection and pumping operations to minimize waste escaping from the site. The owner also undertook extensive excavation and regrading activities, and restricted access to the site.

The site was divided into three operable units (OUs) to facilitate the remedial work. **OU-1** was a long-term phase of treating ground and surface waters. After the site was listed on the National Priorities List (NPL) on June 1, 1986, the U.S. Army Corps of Engineers performed a two-phased Remedial Investigation/ Feasibility Study (RI/FS). In June 1988, a Record of Decision (ROD) for operable unit one (OU-1) was signed to address surface water. The remedies included: instituting soil erosion controls; raising the existing dam on the unlined pond by 13 feet; collecting and treating surface water runoff with gravity settling; collecting shallow ground water oily seeps; and separating water from oil and transporting it to a wastewater treatment plant.

The remedial design was completed in July 1989 and the remedial action was initiated in September 1989. A portable water treatment facility was set up on the site and a dam

constructed to form Rhinehart Pond. The plant met effluent discharge requirements and maintained proper water levels in Rhinehart Pond. The plant operated from March until December, and Rhinehart Pond stored the water until operations resumed in March of the following year. The treatment plant and dam were removed in the summer of 2002 as part of the site close out.

OU-2 consisted of removal of Dutchman's Pond. The ROD was signed on September 29, 1992, with the remedial action commencing on August 26, 1994. Remedial action was completed on February 15, 1995. EPA constructed this pond under emergency conditions to prevent the burning oil formed by pyrolysis from leaving the site via the adjacent stream. The pond is now gone and the area has been reseeded and stabilized.

OU-3 was a site-wide environmental assessment of the area affected by the fire and the object of the remedial efforts. The RI/FS for OU-3 began in the spring of 1996, and consisted of an evaluation of the soils, the sediments, and the ground water. The ROD was signed in September of 2000. The remedial design was started in January 2001 and completed in December 2001. The remedial action was completed in August 2002, and consisted of slope regrade, dam and pond sediment removal, stream reshaping and sediment removal, water treatment plant removal and site revegatation.

Threats and Contaminants

On-site ground water was contaminated with slightly elevated levels of heavy metals including arsenic, cadmium, and lead, as well as volatile organic compounds (VOCs), including toluene and xylene. Sediments were contaminated with oils and residues from the tire fire, in addition to heavy metals such as arsenic, cadmium, lead, and nickel. The soil was contaminated with metals and low levels of polycyclic aromatic hydrocarbons (PAHs) from tire burning. Massey Run and other surface waters were contaminated with various heavy metals and VOCs.

Current Site Status

EPA and VDEQ conducted a second five-year review of the site in September 2002. The site should proceed toward delisting from the NPL.

Community Relations and Concerns

The level of community concern was minimal prior to the fire and very high during the fire and removal action. Concerns have greatly subsided since 1984.

VDEQ Representative	Information Repository
Thomas D. Modena, P.E. Remedial Project Manager Virginia Department of Environmental Quality P. O. Box 10009 Richmond, VA 23240-0009 (804) 698-4208, Fax (804) 698-4234 E-mail: tdmodena@deq.virginia.gov	Handley Library 100 West Picadilly P.O. Box 58 Winchester, VA 22601 (703) 662-9041